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# UNITED STATES PATENT AND TRADEMARK OFFICE

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| 09/401,439 | 09/22/1999 | USAMA M. FAYYAD | 115377.01 | 4688 |

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| EXAMINER |
|---|
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| ART UNIT | PAPER NUMBER |
|---|---|
| 3623 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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|  | **Application No.** | **Applicant(s)** |
|---|---|---|
| **Office Action Summary** | 09/401,439 | FAYYAD ET AL. |
|  | **Examiner** | **Art Unit** |  |
|  | C. Michelle Tarae | 3623 |  |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *13 August 2007*.

2a)☐ This action is **FINAL**.     2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,6,7,10-13,15-17,19,20 and 58* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 6, 7, 10-13, 15-17, 19, 20 and 58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All  b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1.      The following is a Non-Final Office Action in response to the communication

received August 13, 2007.

No claims have been amended.  Claims 1, 6, 7, 10-13, 15-17, 19, 20 and 58 are

currently pending in the application.


### *Response to Amendment*

2.      No claims have been amended.


### *Response to Arguments*

3.      Applicant's arguments in response to the 35 U.S.C. 112, second paragraph

rejection set forth in the previous Office Action are found persuasive; therefore, the 35

U.S.C. 112, second paragraph rejection of claims 1 and 58 is withdrawn.

Applicant's remaining arguments have been fully considered, but are found

unpersuasive.  In the Remarks, Applicant argues the following:

1) that the combination of Sheppard and Lazarus does not teach observing and

analyzing responses of the target subset of users…in real time;

2) that Sheppard does not disclose using the analyzed response of the target

subset of users to form a focused group…such that the prevalent characteristics of the

focused group is used to mine a new set of users whose characteristics are statistically

correlated with the prevalent characteristics;

3) that the specific sequence of method steps recited in independent claim 1 is
not disclosed by Sheppard; and

4) that Sheppard does not teach filling in undetermined attributes with
corresponding ones of the complete set of statistically prevalent user attributes of the
subset of users.

In response to argument 1), Examiner respectfully disagrees. Examiner
respectfully submits that Lazarus does teach observing and analyzing responses of the
target subset of users to the presently conducted marketing campaign cycle *at least
partly in real-time.* Lazarus discloses an Internet advertising system that tracks users'
responses to targeted advertisements in real-time and then selects the appropriate ad
to present to the user by analyzing the user's profile vector and active set of entity
vectors (col. 4, lines 45-53; col. 9, lines 39-67). Accordingly, Lazarus also analyzes the
responses in real-time as the selection of appropriate ads to show to users and the
updating of users' profiles are done in response to observing and analyzing *current* user
action (col. 17, lines 5-11; col. 22, lines 52-53). Therefore, Examiner respectfully
submits Lazarus does teach observing and analyzing responses of the target subset of
users to the presently conducted marketing campaign cycle *at least partly in real-time.*

The rejection has been updated below to reflect Examiner's argument.

In response to argument 2), Examiner respectfully disagrees. In col. 14, lines 9-
26, Sheppard discusses using a neural clustering function to produce a set of

statistically significant record groups of a customer database, where the record groups have profiles with exploitable behavioral characteristics. Col. 13, lines 65-col. 14, lines 7, further discloses that the record groups may be reclustered using a subset of the original data. Therefore, Examiner respectfully submits Sheppard does disclose using the analyzed response of the target subset of users to form a focused group...such that the prevalent characteristics of the focused group is used to mine a new set of users whose characteristics are statistically correlated with the prevalent characteristics.

In response to argument 3), Examiner respectfully disagrees. Examiner further submits that Applicant has not specifically shown how Sheppard does not teach the specific sequence of claim 1 other than stating that the specific sequence is not taught. As discussed in the rejection below, Sheppard discloses the sequence of claim 1 in the following ways:

1) training the data mining engine with a set of training data comprising the user database by clustering the user database into different segments of users distinguished by different states of one or more characteristics (col. 8, lines 5-13 and 34-41; col. 12, lines 21-26; Rule-based segmentation function segments the user database according to various characteristics (i.e., married and non-married segments).);

2) inputting to the data mining engine a predetermined set of characteristics including a predetermined set of user attributes likely to pertain to a product to which the marketing campaign is directed and, in response thereto, obtaining from the data mining engine a subset of the users in the database having the highest correlation to the

characteristic by determining which of the segments found during clustering of the user

database has the highest statistical correlation to the predetermined set of

characteristics (col. 14, lines 9-26; col. 18, lines 5-16; The system uses the neural

clustering function to obtain a subset of users having a statistically significant correlation

to a characteristic.);

3) determining in the data mining engine a set of prevalent attributes of the

subset of users (col. 18, lines 10-16; The neural clustering function determines

prevalent attributes of a subset of users having a statistically significant correlation to a

characteristic.);

4) defining a target database of users and determining in the data mining engine

a target subset of users in the target database statistically correlated to the set of

prevalent attributes (col. 14, lines 9-26; col. 18, lines 5-16);

5) and 6), conducting a presently conducted marketing campaign cycle directed

at the target subset of users and observing and analyzing responses of the target

subset of users to the presently conducted marketing campaign cycle (col. 20, lines 32-

40; The system learns from observing actual responses of current customers being

targeted by a marketing campaign.  The observed responses may then be stored in a

database to predict future responses.);

7) forming a focused group of the target subset of users whose observed

response was a particular type of response (col. 20, lines 40-50; Based on their

observed behavior, prospect lists are scored to identify individuals who are most likely

to respond to a future marketing campaign, where scoring individuals to identify them is

placing them in a group of individuals who have a particular score or range of scores,

and where a response of "most likely to respond" is a type of response (i.e., is

considered a favorable response). Thus, the individuals identified from the prospect

lists are formed into a focused group based on a favorable type of response.);

8) determining, in the data mining engine, a group of prevalent characteristics of

the focused group of users (col. 20, lines 37-44; The observed responses (i.e.,

characteristics) are stored in a database for analysis and to predict future customer

responses.); and

9) defining a database to be mined and determining, in the data mining engine, a

new set of users in the database to be mined whose characteristics are statistically

correlated with the group of prevalent characteristics (col. 13, line 65-col. 14, line 26;

col. 18, lines 5-16; The system uses the neural clustering function to obtain a subset of

users having a statistically significant correlation to a characteristic. User subsets can

be refined and reclustered multiple times.).

In conclusion, Applicant's arguments 1)-3) have been fully considered, but are

found unpersuasive.

In response to argument 4), Examiner finds the argument persuasive and

provides an updated rejection below.

## *Claim Rejections - 35 USC § 103*

4.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.      Claims 1, 6, 7, 10-13, 15, 19, 20 and 58 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Sheppard (U.S. 6,026,397) and Lazarus et al. (U.S.

6,134,532).

As per claims 1 and 58, Sheppard discloses a method for managing a marketing

campaign and machine-readable medium having instructions stored thereon for

execution by a processor to perform a method, comprising:

providing a data mining engine capable of being trained with training data and

capable thereafter of performing inferences relative to the training data and on

additional data (col. 5, lines 34-39; col. 13, lines 14-26; The system provides a neural

clustering function, which is a data mining engine capable of being trained with training

data, to perform inferences associated with the training data.);

providing a user database containing the observed characteristics of each one of

a set of users, the characteristics comprising at least one of: (a) at least one of the

user's attributes, (b) at least one of the user's preferences (col. 4, lines 43-47; col. 5,

line 67-col. 6, line 5; Figure 1; The system analyzes a customer database that includes

demographic and lifestyle data.);

training the data mining engine with a set of training data comprising the user

database by clustering the user database into different segments of users distinguished

by different states of one or more characteristics (col. 8, lines 5-13 and 34-41; col. 12,

lines 21-26; col. 14, lines 9-26; The system uses a rule-based segmentation function to

segment the user database according to various characteristics (i.e., married and non-

married segments).);

inputting to the data mining engine a predetermined set of characteristics

including a predetermined set of user attributes likely to pertain to a product to which the

marketing campaign is directed and, in response thereto, obtaining from the data mining

engine a subset of the users in the database having the highest correlation to the

characteristic by determining which of the segments found during clustering of the user

database has the highest statistical correlation to the predetermined set of

characteristics (col. 14, lines 9-26; col. 18, lines 5-16; The system uses the neural

clustering function to obtain a subset of users having a statistically significant correlation

to a characteristic.);

determining in the data mining engine a set of prevalent attributes of the subset

of users (col. 18, lines 10-16; The neural clustering function determines prevalent

attributes of a subset of users having a statistically significant correlation to a

characteristic.);

defining a target database of users and determining in the data mining engine a

target subset of users in the target database statistically correlated to the set of

prevalent attributes (col. 14, lines 9-26; col. 18, lines 5-16);

conducting a presently conducted marketing campaign cycle directed at the

target subset of users and observing and analyzing responses of the target subset of

users to the presently conducted marketing campaign cycle (col. 20, lines 32-40; The

system learns from observing actual responses of current customers being targeted by

a marketing campaign.  The observed responses may then be stored in a database to

predict future responses.);

forming a focused group of the target subset of users whose observed response

was a particular type of response (col. 20, lines 40-50; Based on their observed

behavior, prospect lists are scored to identify individuals who are most likely to respond

to a future marketing campaign, where scoring individuals to identify them is placing

them in a group of individuals who have a particular score or range of scores, and

where a response of "most likely to respond" is a type of response (i.e., is considered a

favorable response).  Thus, the individuals identified from the prospect lists are formed

into a focused group based on a favorable type of response.);

determining, in the data mining engine, a group of prevalent characteristics of the

focused group of users (col. 20, lines 37-44; The observed responses (i.e.,

characteristics) are stored in a database for analysis and to predict future customer

responses.); and

defining a database to be mined and determining, in the data mining engine, a

new set of users in the database to be mined whose characteristics are statistically

correlated with the group of prevalent characteristics (col. 13, line 65-col. 14, line 26;

col. 18, lines 5-16; The system uses the neural clustering function to obtain a subset of

users having a statistically significant correlation to a characteristic. User subsets can

be refined and reclustered multiple times.).

Sheppard does not expressly disclose observing and analyzing responses of the

target subset of users to the presently conducted marketing campaign cycle *at least*

*partly in real-time.* Lazarus discloses an Internet advertising system that tracks users'

responses to targeted advertisements in real-time (col. 4, lines 45-53; col. 9, lines 39-

41) and then selects the appropriate ad to present to the user by analyzing the user's

current user action, profile vector and active set of entity vectors (col. 9, lines 41-67).

Thus, Lazarus also analyzes the responses in real-time as the selection of appropriate

ads to show to users and the updating of users' profiles are done in response to

observing and analyzing *current* user action (col. 17, lines 5-11; col. 22, lines 52-53). At

the time of the invention, it would have been obvious to a person of ordinary skill in the

art to modify the teachings of Sheppard to include observing and analyzing responses

to a presently conducted marketing campaign cycle at least partly in real-time because

doing so provides advertisers with the ability to track user behavioral characteristics in

real-time and, in turn, react quickly to the tracked behavior with personalized

advertisements, thereby providing an accurate and granular level of detail of user

interests (see Lazarus col. 4, lines 39-53) which supports providing users a marketing

campaign catered to them and encouraging positive responses to the marketing

campaign, which is a goal of Sheppard (see Sheppard col. 2, lines 29-32).

As per claim 6, Sheppard discloses the method of claim 1 wherein the target

database comprises the user database with which the data mining engine has been

trained (col. 4, lines 43-47; col. 5, line 67-col. 6, line 5; Figure 1; The system analyzes a

customer database that includes demographic and lifestyle data.).

As per claim 7, Sheppard discloses the method of claim 1 wherein the target

database comprises an additional database not included in the user database, the

additional database defining characteristics of a set of new users (col. 5, line 65-col. 6,

line 14; The system can conduct analyses on multiple databases.).

As per claim 10, Sheppard discloses the method of claim 1 wherein the database

to be mined comprises the user database with which the data mining engine was

trained (col. 4, lines 43-47; col. 5, line 67-col. 6, line 5; Figure 1).

As per claim 11, Sheppard discloses the method of claim 1 wherein the database

to be mined comprises the target database of users (col. 4, lines 43-47; col. 5, line 67-

col. 6, line 5; col. 13, line 65-col. 14, line 7).

As per claim 12, Sheppard discloses the method of claim 1 wherein the database

to be mined comprises a new database not included in either the user database or in

the target user database (col. 5, line 65-col. 6, line 14; col. 13, line 65-col. 14, line 7;

The system can conduct analyses on multiple databases and further, has the ability to

continuously refine user sets, thus creating new user databases with which to analyze.).

As per claim 13, Sheppard discloses the method of claim 1 further comprising:

directing a subsequent marketing campaign cycle to the new set of users (col. 13, line

65-col. 14, line 7; col. 20, lines 32-50).

As per claim 15, Sheppard discloses the method of claim 1 wherein the user preference corresponds to a prior purchase of a product which is a subject of the marketing campaign (col. 2, lines 34-38; col. 20, lines 32-50).

As per claim 19, Sheppard discloses the method of claim 1 wherein clustering comprises: providing with a visualization tool a tabulation of characteristics of each user group with the probability of each characteristic in the cluster (col. 9, lines 9-11 and 15-25; col. 10, lines 10-36; Figure 4; The system creates "bins" of segmented users and creates histograms that provides visual statistical information relating to the bins.);

labeling each cluster with a statistically predominant characteristic thereof in accordance with the tabulation (col. 10, lines 2-9).

As per claim 20, Sheppard discloses the method of claim 19 wherein the statistically predominant characteristic of each cluster distinguishes the cluster from the other clusters (col. 13, lines 18-26; col. 14, lines 9-26; The groups are segmented according to statistically prevalent characteristics that are different from cluster to cluster.).

6.      Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheppard (U.S. 6,026,397), Lazarus et al. (U.S. 6,134,532) and Keeler et al. (U.S. 5,613,041).

As per claims 16 and 17, Sheppard discloses the method of claim 1 further comprising:

determining, in the data mining engine, a complete set of statistically prevalent

user attributes of the subset of users (col. 5, lines 33-45; col. 14, lines 9-26; col. 18,

lines 5-16; The system uses the neural clustering function to obtain a subset of users

having a statistically significant correlation to a characteristic.).

The combination of Sheppard and Lazarus does not expressly disclose for any

member of the subset of users having certain attributes which are undetermined in the

user data base, filling in the certain undetermined attributes with the corresponding

ones of the complete set of statistically prevalent user attributes of the subset of users.

Keeler et al. discloses for any member of the subset of records having certain

attributes which are undetermined in the data base, filling in the certain undetermined

attributes with the corresponding ones of the complete set of statistically prevalent

attributes of the subset of records (col. 4, lines 1-11; col. 6, lines 29-35).  At the time of

the invention, it would have been obvious to a person of ordinary skill in the art to

modify the combination of Sheppard and Lazarus to fill in undetermined attributes with

corresponding ones of the complete set of statistically prevalent user attributes of the

subset of users because doing so enhances the accuracy and performance of the

neural network by including as much data as possible for analysis (see Keeler et al., col.

1, lines 63-67).

## *Conclusion*

7.      Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. Michelle Tarae whose telephone number is 571-272-6727. The examiner can normally be reached Monday – Friday from 8:30am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz, can be reached at 571-272-6729.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. MICHELLE TARAE
PRIMARY EXAMINER

October 15, 2007